

STANDARD OPERATING PROCEDURE

DEPLOYMENT OF SEMIPERMEABLE MEMBRANE DEVICES

1.0 SCOPE AND APPLICATION

This procedure describes the procedures for deploying and collecting caged semipermeable membrane devices (SPMDs), for assessing bioavailable concentrations of hydrophobic, lipophilic organic contaminants (e.g., PCBs, pesticides, etc.). SPMDs accumulate dissolved-fraction organic contaminants, which are the contaminant fraction most available to aquatic organisms. Procedures are described for both commonly used types of SPMDs; those filled with triolein and those filled with n-hexane (e.g., the PISCES sampler).

As with any field deployment, care must be taken to balance the need for a secure, vandal-resistant deployment vs. the need to retrieve the samplers.

2.0 METHOD SUMMARY

SPMDs are deployed in metal cages in a water body for 28 days, retrieved, and processed for organic contaminant analysis.

3.0 PROCEDURE

3.1 Materials and Supplies

- SPMDs; either the type filled with the triglyceride lipid triolein, or the solvent n-hexane.
- Appropriate metal cages, preferably made of stainless steel.
- Appropriate deployment supplies; buoys, ropes, anchors, hose clamps, etc. The exact supplies required will vary from one location to another.
- Paper towels
- Ice chests
- Wide-mouth jars or metal cans, for transporting the SPMDs

3.2 Procedure

[Note: steps marked with “**” denote general descriptions of activities that will vary from project to project, the details of which are described in detail in the project-specific Field Sampling Plan.]

1. Transport the SPMDs to the field, taking care to minimize exposure to the atmosphere or other potential sources of contamination. Triolein-filled SPMDs may be transported in their metal shipping cans.